

was rejected as being unpatentable over the Haber patent in view of the McConnaughey patent. Applicant notes that the original claim language was rejected as including product-by-process steps.

As an overview to the present reply, Applicant has amended the original claim language in the form of new Claim 3. New Claim 3 incorporates the limitations of previous independent Claim 1 and dependent Claim 2 and expresses such limitations in a more proper U.S. format, including proper antecedent bases and proper structural interrelationships throughout. Any indefinite terminology found in the original claim language has been corrected herein.

Additionally, independent Claim 3 specifically recites that the stub has an "exterior surface" from which the stopper and the pair of annular flanges radially extend. It was indicated that the pair of annular flanges extend "in generally parallel relationship to each other". The rubber bulb is now recited as having an end "abutting" a surface of the stopper. The rubber bulb is specified as being in "surface-to-surface contact with the exterior surface of the stub". Additionally, it now recited that the rubber bulb extends between the pair of annular flanges so as to have a surface contacting the exterior surface (of the stub) in a space between a pair of annular flanges. Additionally, and furthermore, it should be noted that the rubber bulb is now recited as having "a coating" extending entirely over the mushroom-shaped connector. Applicant respectfully contends that these features serve to distinguish the present invention from the prior art. Support for these limitations is easily found in the drawings and specification of the present invention.

The contact between the surfaces of the rubber bulb and the stub is the result of the rubber bulb being securely connected to the shank when molding the shank of the plunger. This type of molded connection makes the assembling process of the rubber bulb unnecessary. This also serves to reduce the manufacturing cost since it is necessary to prepare a machine for assembling the shank

of the plunger and the rubber bulb. The mushroom-shaped connector is coated by the rubber bulb such that the mushroom-shaped connector can be easily inserted into the needle of the syringe due to the material characteristic of the rubber bulb. Applicant respectfully contends that these elements of independent Claim 3, along with the advantages achieved thereby, are neither shown nor suggested by the prior art patents.

Fundamentally, the Zdeb patent does not show the pair of annular flanges. The rubber bulb 236 in the Zdeb patent appears to overlie a singular annular flange of the stub but does not extend so far into as to contact the exterior surface of the stub. Additionally, the Zdeb patent does not appear to show the rubber bulb as having a "coating" over the mushroom-shaped connector. The Zdeb patent also fails to show the "pair of annular flanges" and the rubber bulb as having a surface contacting the exterior surface of the stub in the space between the pair of annular flanges. Quite clearly, the Zdeb patent appears to show the prior art technique whereby the rubber bulb is assembled onto the stub and mushroom-shaped connector after molding. The Zdeb patent would have similar high costs associated with assembly and would lack the advantages of the coating of the rubber bulb over the surface of the mushroom-shaped connector. Quite clearly, the "mushroom-shaped connector" of the Zdeb patent appears to be free of any coating material extending thereover.

The Haber patent appears to be an entirely different type of syringe than that of the present invention. As can be seen in Figure 2 of this patent, the rubber bulb appears to have a surface which abuts the stopper and contacts the exterior surface of the stub in the area between the annular flange and the stopper. The Haber patent lacks the "pair of annular flanges". The Haber patent shows a pointed type of connector but does not show a "mushroom-shaped connector". The rubber bulb is illustrated as manually assembled over the stub. The material of the rubber bulb does not, in any

way, extend to the exterior of the stub in the area between the "pair of annular flanges". There also does not appear to be any "coating" extending entirely over and in surface-to-surface contact with the mushroom-shaped connector. On this basis, Applicant respectfully contends that the Haber patent fails to achieve the advantages to the present invention. Assembly of the rubber bulb on the stub is required. There is no "coating" over any "mushroom-shaped connector" so as to allow the mushroom-shaped connector to be easily inserted into the needle of the syringe because of the material characteristic of the rubber bulb. There are no strong adhesion forces caused by the direct contacting of the rubber bulb in the space between the pair of annular flanges.

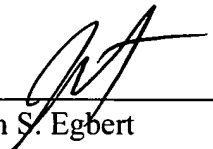
Relative to dependent Claim 2, the McConnaughey patent does show a piston for a hypodermic syringe that would have a pair of annular flanges. However, as can be seen in the McConnaughey patent, the rubber bulb does not contact the exterior surface of the stub in the area between the pair of annular flanges (see Figure 7a). The rubber bulb does not have a surface in surface-to-surface contact with the stopper. In fact, it is quite difficult to see how the structure of the McConnaughey patent can be combined, in any way, with the structure of the Haber patent. These are two quite different types of syringes. Compatibilities between the rubber bulbs would be quite difficult.

Based upon the foregoing analysis, Applicant contends that independent Claim 3 is now in a proper condition for allowance. Reconsideration of the rejections and allowance of the claims at

an early date is earnestly solicited. Since no new claims have been added above those originally paid for, no additional fee is required.

Respectfully submitted,

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